Historic, archived document

Do not assume content reflects current scientific knowledge, policies, or practices.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Chemistry and Engineering

Carbohydrate Research Division

SOAP MAKING

The Department has no publications on making soap. A list of books relative to commercial soap making is attached.

Home Made Soap

Soap may be made at home by treating melted animal fats or vegetable oils with a strong solution of lye as described below. Originally, the lye solution was prepared by treating the potash (potassium carbonate) solution obtained by leaching wood ashes with freshly slaked lime, allowing the precipitate which is formed to settle, withdrawing the clear solution, and boiling it until a concentrated solution of lye is obtained. Soaps made with potash lye are soft. Hard soaps are made with the caustic-soda lye. Directions for making soap at home are usually found on the labels of the small cans in which the soda lye is purchased at grocery and other stores.

Making soap in the home is practical only when fats or fatty oils are available. Unless the directions are very carefully followed, the soap made will contain uncombined (free alkali) lye, fat, or both. As the quality of the soap is also dependent on the condition of the fat or oil used, it is important to have the latter in as good condition as possible, and free from insoluble material. The quality of household grease can be improved by melting it in about an equal volume of hot water. After slowly stirring the mixture for about 2 minutes, set it aside to cool until the grease has solidified sufficiently so that it can be removed easily from the surface of the water.

Preparation of Soap.--Carefully weigh 2-1/2 pounds of the clarified fat (or oil) and place in an iron kettle.* Heat until the fat is completely melted, then set it off the stove to cool. Meanwhile, dissolve 5-1/2 ounces of lye** (the usual contents of a small can) in 11 ounces of water in an iron receptacle, using a wooden paddle for stirring. As soon as the lye is dissolved, add the solution to the luke warm fat or oil and stir thoroughly. Heat the mixture and stir it from the bottom upwards until the lumps have disappeared. To this add 5-1/2 ounces of water and continue the stirring until it is all dissolved in the soap. Then without delay, transfer the soap to a cardboard box of suitable size. After standing 24 hours, remove the soap from the box and cut it into cakes. Before use the cakes should be allowed to harden for a week or longer in a clean, dry place, away from direct sunlight.

If these directions are followed exactly as given, soap will be obtained which contains no free alkali and only about 2 percent of uncombined fat, which is not at all objectionable.

Reference Books on Soap Making

"The Modern Soap and Detergent Industry" by Geoffrey Martin. Published by Crosby, Lockwood & Son, London.

"A Practical Manual on the Manufacture of Domestic, Toilet and Other Soaps" by G. H. Hurst, 3d Ed. Published by Greenwood & Son, London.

"Soap and Glycerine Manufacture" by E. T. Webb. Published by Davis Bros., London.

"Soap: Its Composition, Manufacture and Properties" by W. H. Simmons, 4th Ed. Published by Sir Isaac Pitman & Sons, London.

"Modern Soap Making" by E. G. Thomsen and C. R. Kemp. Published by MacNair-Dorland Co., New York, N. Y.

Note: Most city libraries will have one or more of the above or other books on soap making.

WARNING:

*Aluminum kettles are not suitable because they are rapidly attacked by the solution of lye.

**On account of the caustic nature of lye, care should be taken to avoid its contact with the skin or clothing. If this occurs, wash it off at once with water, following this treatment with vinegar if necessary.